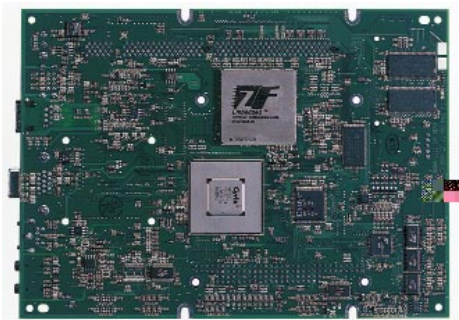


ZF SYSTEMCARD™ 5MX

Network-ready embedded systems computer based on ZF's Pentium-class chipset



Front View



Rear View

180MHz Pentium-class CPU in a 5.25" hard disk footprint

10/100Base-T Ethernet

VGA/XGA/SVGA/SXGA display controller supporting CRT and flat-panel displays

Soundblaster compatible

CompactFlash socket

Floppy disk and IDE controllers

Six RS232C ports: one selectable as RS232 or RS485

One parallel port

Rapid integration:

Proven PC compatibility

Standard motherboard feature set

Expert technical support

PCI expansion bus

2 USB ports

On-board TFT flat-panel support

The ZF SystemCard is a network-ready, full-function single board computer available with an ZF's Pentium-class CPU. The SystemCard features our low power, high performance Pentium-class chipset with 10/100Base-T Ethernet and a display controller to create a compact single board computer designed for networked applications. The form factor of the SystemCard matches the footprint of a standard 5¼" hard disk, ideally sized for integration into a wide range of applications.

Complete Feature Set

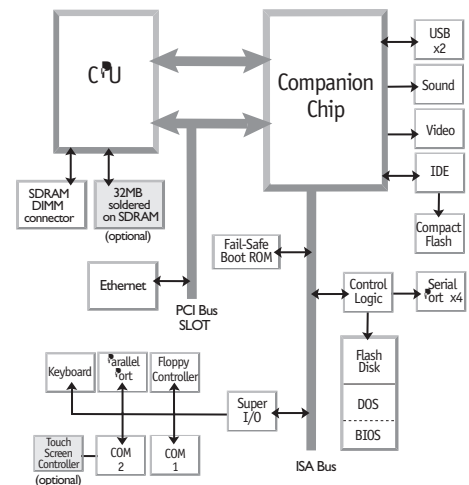
The ZF SystemCard incorporates all the functionality of a standard PC motherboard with a number of enhancements and added features. The SystemCard includes serial and parallel I/O, floppy and IDE disk controllers, user-available flash,

CompactFlash socket, external JEDEC byte-wide socket, PC/104 expansion bus, AT-compatible BIOS. Our patent pending Fail-Safe Boot™ ROM allows the user to easily reboot the system if the BIOS is corrupted or if the CMOS is inadvertently configured in a manner which locks the system in an unusable mode. The user can then simply reprogram the FLASH to recover the system. The SystemCard 5MX supports VGA/XGA/SVGA/SXGA; 64-bit graphics processing; 64-bit Windows accelerator; display

compression technology; and monitor output of 1280 x 1024 @ 75Hz; and TFT output programmable to 1280 x 1024 of monitor output.

Quicker design cycle, shorter time-to-market

Easily integrate the widest selection of embedded hardware peripherals by attaching PC/104 expansion modules directly to the board via the PC/104 expansion bus. The PC/AT ROM-BIOS and DOS enable you to develop software on your desktop PC and then easily transfer your development work to the embedded system with little or no modification. Or you can develop your application software directly on the ZF SystemCard.



We Make Computing Invisible

SPECIFICATIONS

ZF SystemCard™ 5MX

CPU Pentium-Class -180MHz

- Full 64-bit internal architecture.
- Cost-effective 16-bit external bus and a 32-bit external PCI expansion bus.
- Virtual memory, paging and hardware enforced protection.
- Integrated Floating Point Unit (FPU).

DRAM Controller

- High performance 64-bit synchronous DRAM controller.
- Shadowed BIOS, optimum performance.
- DIMM socket for up to 128MB.
- 32MB DIMM included, user installed. (Development Kit item only.)

PC Core Logic with PC/AT Compatibility

- DMA and Interrupt controllers.
- Timer/counters.
- 16KB write-back L1 cache.
- AT keyboard controller.

Universal Serial Bus (USB)

- Two independent USB interfaces.
- Open Host Controller Interface (OpenHCI) specification compliant.

Expansion Buses

- Supports the PC/104 expansion bus (nonstack through version).
- Add up to three PC/104 modules.
- Supports PCI expansion bus.
- PCI 2.1 compliant.
- Supports PCI initiator-to-ISA and ISA master-to-PCI cycle translations.

Audio Support

- Soundblaster compatible.
- 16-bit stereo FM synthesis.
- OPL3 emulation.

Fail-safe Boot ROM™

- Boot to a pre-determined, factory defined state regardless of the internal BIOS flash memory's condition.
- Full flash memory restores functionality via the serial port.
- Recover easily from the corruption or loss of CPU boot data.

Ethernet Controller

- Based on the Realtek RTL8139A Fast Ethernet controller with Power Management
- 100BaseT (twisted-pair), 10/100Mb/s.
- 32-bit address and data bus.
- Full compliance with IEEE 802.3u 100Base-T specifications and IEEE 802.3x Full Duplex Flow Control.
- Compliant to PCI Revision 2.1.
- Supports ACPI, PCI power management.
- Broad NOS support, including Novell Netware, Microsoft Windows 95, Microsoft.
- LAN Manager, SCO UnixWare, IBM.
- LAN Server, SunSoft PC-NFS, SunSoft Solaris, Artisoft LANtastic, Banyan Vines.

Serial Ports

- Five 16550-type RS232C serial ports.
- One 16550-type RS232C/RS485 serial

port.

- RS485 supports half to full duplex modes.

Parallel Port

- One fully-compatible PC/AT parallel port.
- Supports bi-directional operation (EPP).

Touch Screen Interface

- High resolution: 4096 x 4096
- 5 Wire Controller
- COM 2 not available with touch feature

CRT/Flat-Panel Controller

- 2 Mbytes of system DRAM is used for Video.
- Full VGA and VESA mode support.
- 64-bit Windows accelerator.
- 64-bit Graphic processing.
- Supports CRT monitors with resolutions up to 1280 x 1024.
- Supports dual scan color STN flat panels up to 1024 x 768 (with optional daughter card).
- Direct interface to color TFT panels.
- Supports 8, 9, 12, 15, 16, and 18-bit data interfaces.
- Supports power-sequencing controls for Vdd, Vee, and +12V to inverter for backlights.

Floppy Disk Controller

- Software compatible with 765B floppy controller and PC BIOS.
- Supports all standard PC floppy formats.
- Only supports one floppy drive.
- FFC connector for drive connection.

IDE Hard Drive Interface

- Full 40-pin interface to standard IDE hard disk drive.
- Supports up to three IDE drives: harddrive, CD-ROM, and Compact Flash Disk.
- Supports CompactFlash™.
- UltraDMA (ATA-4) support.

Solid State Flash Storage

- 1.4M byte Flash EPROM, available for OS and OEM software.
- DOS-compatible BIOS in Flash EPROM.
- Support for CompactFlash removable cartridge.
- 2M to 60M bytes or more storage.
- Can be configured to be the boot drive.

Watchdog Timer

- Programmable watchdog time period.
- Automatic reset or NMI (jumper selectable) if user application goes out of control.

Power Monitor

- Brownout protection, provides reliable reset signal if power fluctuates.

PC BIOS

- Standard, extended PC BIOS functionality.
- Easy to upgrade using ZF Embedded's unique Download Interface.

Embedded Disk Operating System

- Supports most PC/AT-compatible operating systems, including MS-DOS and DR-DOS.
- Support for standard desktop software,

including Windows 3.1, 9x, NT, and Norton Utilities.

- Supports Embedded DOS 6-XL, fully multi-threaded version of the standard PC DOS.

Electrical Specifications

- Requires +5VDC @ 2.2amps $\pm 5\%$ (32MB DRAM).
- Future support for low-power modes.

Mechanical/Environmental

- **Size:** 5.75" x 8.00" (146mm x 203mm)
- PC/104 bus compliant with PC/104V2 specification.
- Standard connectors for CRT, PS2, keyboard, USB, 100Base-T, mic in and headphones.
- Standard ribbon cable connectors for EIDE, serial, and parallel interfaces.
- **Processor case operating temperature:** 32°F to 158°F (0°C to 70°C).
- **Storage temperature:** -67°F to 212°F (-55°C to 100°C).
- **Relative humidity:** 5% to 95% non-condensing.
- **Weight:** 10 oz (284 gm).

Ordering Information

SCX-5MX-Q-01

ZF SystemCard 5MX. 5.25" form factor, includes Pentium-class chipset, 2MB built-in Flash, SVGA controller, 100 or 10Base-T Ethernet controller, Soundblaster compatible, Compact Flash interface, speaker, BIOS and Embedded DOS-ROM. Q-01 does not include DRAM.

SCX-5MX-Q-02

Q-02 includes the above description, plus touch interface and 32MB DRAM soldered on.

SCX-5MX-K-01

ZF SystemCard 5MX Development Kit. 5.25" form factor, includes Pentium-class chipset, 2MB built-in Flash, SVGA controller, 10Base-T Ethernet controller, Soundblaster compatible, Compact Flash interface, speaker, BIOS, technical manuals, cables, and utility software. Includes 32MB DIMM, user installed. (DIMM is a SystemCard 5MX Development Kit item only.) K-01 does not include DRAM.

SCX-5MX-K-02

K-02 includes the above description, plus touch interface and 32MB DRAM soldered on.



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